# USER MANUAL

## DC100G

**UNI-RAM CORPORATION • ONTARIO • CANADA**

Revision 2010-06

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**INTRODUCTION**

Uni-ram holds many patents on designs used in its innovative products. Every machine is tested for compliance with Quality Assurance standards. Follow the instructions on preparation, use and operation to operate this machine safely and effectively. Ensure that this manual is readily available to the operator at all times. If you have any questions about the operation of this machine, contact:

North America:
Uni-ram Technical Service
1-800-417- 9133
Other Continents:
Contact Your Supplier

**CAUTIONS AND WARNINGS**

- The operator should wear protective clothing in accordance with local safety and environmental regulations, with a minimum of face goggles and gloves along with an apron and respirator if required.
- Always disconnect the power source before performing maintenance.
- DO NOT SMOKE OR USE THIS EQUIPMENT NEAR A POTENTIAL SOURCE OF IGNITION SUCH AS SPARKS OR AN OPEN FLAME. This unit must be located at least 6 feet (1.8 m) from all potential sources of ignition including electrical receptacles, switches, pilot lights, fixtures and contacts when installed in a non - hazardous locations.
- The ambient temperature must be between 5°C (41°F) to 35°C (95°F).
- DO NOT RECYCLE NITROCELLULOSE WHICH IS EXTREMELY VOLATILE. IT AUTOMATICALLY IGNITES AT 135 °C TO 166 °C (275°F TO 330 °F). Do not install, operate or maintain this equipment where the auto ignition temperature of the solvent is lower than 250 °C (482°F).
- Do not install, operate or maintain this equipment where the auto ignition temperature of the hazardous atmosphere(s) is lower than 250 °C (482°F).
- Solvents that are recycled can be flammable. Establish and follow safe practices to store and handle solvents.
- Units must be installed by a qualified electrician.
- Install on a dedicated circuit with sufficient current capacity (see specifications section).

## FEATURES AND SPECIFICATIONS

All Uni-ram Solvent Recyclers feature **rapid-start** direct electric heating of solvent and a **short cool-down time** due to high-efficiency condensers and air cooling with a motor driven fan.

## SAFETY FEATURES

- This unit is certified under UL standard 2208 and CSA standards C22.2 No. 30 and No. 88 for use in non-hazardous locations as well as for use in hazardous locations Class 1, Division 1, Group D – T2A and Class 1, Division 2, Group D -T2A.
- **Explosion proof construction** and intrinsically safe electric circuitry.
- **Computer controlled** with many built-in safety programs including temperature control of all critical points including tank, condenser and fan motor.
- **Self Diagnostic** error messages are displayed on the Display Panel.
- **Dual lid** cover system.

Warranty: 1 year on unit, 2 years on pump.

| SPECIFICATIONS | |
|---|---|
| MODEL | DC100G |
| VOLTAGE (V) | 220/240* |
| RECOMMENDED CIRCUIT AMPS | 30 |
| MAX TEMPERATURE SET POINT | 240°C |
| TANK SIZE | 20 US GAL (80L) |
| CONDENSER AND FITTING | STAINLESS STEEL |
| LID GASKET | VITON |
| SHIPPING DIMENSIONS (WDH) | 47” X 27” X 50” |
| WEIGHT (LB/KG) | 450/205 |

***Note on voltage:**

Operating the unit at a lower voltage (eg: 208V) may result in reduced performance.

## SOLVENT REQUIREMENTS

Dirty solvent to be distilled must meet **each requirement** described below. Be sure to read the MSDS (Material Solvent Data Sheet) on the properties of the pure solvent to be recyled.

- The BP (Boiling Point) of the dirty solvent must be less than 240°C (464°F). BP increases with greater contamination. **Note:** Recycle recently contaminated solvent only. Standing solvent can become acidic over time.
- The auto-ignition temperature of the solvent to be distilled must be higher than 250°C (482°F) for safe operation. Do not recycle Nitrocellulose. The auto ignition temperature is 135°C (275°F).
- For good water separation to occur, the organic (oil-based) component of the solvent mixture must be **non-miscible** in water and have a specific gravity of 0.85 or less.

DEFINITIONS

Flash Point: The lowest temperature at which the vapor of a solvent can be made to ignite momentarily in air.

Auto-ignition temperature (often referred to as “ignition temperature” or “ignition point”): the temperature at which solvent ignites by itself.

**DELIVERY INSPECTION**

- Inspect the shipping carton for any sign of transport damage. Carefully remove the unit from the shipping carton and check the unit for damage. Report any transport damage immediately to the carrier and your vendor. Initiate a freight claim with the carrier. The manufacturer is not responsible for freight damage.
- Check for the parts listed and/or shown below. If any parts are missing, contact your supplier. Additional consumables and accessories are also listed.
- Level the unit using the adjustable feet and install the Door Handle (included in the ACCESSORY KIT).

## ACCESSORY KIT CONTENTS

| |
|---|
| Manual |
| Door Handle & 2 Screws |
| Connection Hose Kits (see photo on right) |
| Drum Mixer |
| Lid Gasket |

**DRUM MIXER**

**CONNECTION HOSE KITS**

**WATER OUT** **DIRTY SOLVENT IN** **CLEAN SOLVENT OUT**

**LOCATION**

This unit is certified for use in non-hazardous and hazardous locations
Class 1, Division 1 Group D and Class 1, Division 2, Group D.

- **Non-hazardous Locations:**
  If using a plug rated for non-hazardous locations, the unit must be located outside of a hazardous location. In such a location, we recommend that the receptacle be located a minimum of 6 feet from the unit and a minimum of 3 feet from the floor. We also recommend that the unit be located at least 6 feet from electrical receptacles, switches, pilot lights, fixtures etc. **To clarify the definition of an appropriate location, contact your local authority. This unit must be connected to the power supply only by a qualified electrician in accordance with an appropriate Electrical Code.**

- **Hazardous Location:**
  In hazardous locations (Class 1, Division 1, Group D and Class 1, Division 2, Group D), the power cord must be connected to the main power supply only by a qualified electrician, in accordance with the National Electrical Code. This equipment must be properly connected to an explosion proof outlet (receptacle or hard wired).

**Select a Location That Meets EACH AND EVERY Requirement, Described Below.**

1) Comply with the instructions in the section: CAUTIONS AND WARNINGS.

2) **Make sure that the unit is placed in a in a location so that there is plenty of space to manoeuver the drums, especially when they are full.** There must also be enough space behind the unit to accomodate al the hoses, connections and required ventilation. Ensure that the safety lid and door opens fully. The unit must be in a location where people or equipment cannot disturb the cables or connections. The cord must be connected directly to the main power supply; an extension cord cannot be used.

# SETUP AND CONNECTIONS

**1. PLACEMENT OF CONTAINERS**

**2. POWER CONNECTION**

**3. AIR CONNECTION**

**4. LEVEL SENSOR TUBES, SOLVENT-WATER HOSES, DRUM MIXER AIR LINE**

**5. GROUNDING WIRES**

6. **CONTAINER CONNECTIONS and ADJUSTNG THE LEVEL SENSOR TUBES**

7. **DRUM MIXER**

**8. RECEIVING TANK / WATER SEPARATOR - PRIMING and CONNECTIONS**

## 1. PLACEMENT OF CONTAINERS

Arrange the three containers, shown in the following diagram, in a convenient way that does not block the free flow of air around the unit. **Note: the full containers will be very heavy. Make sure there is enough space to manoeuver them in a safe manner.**

## 2. POWER CONNECTION

Connect the unit to a dedicated 20A, 200/240V branch circuit using one of the methods described in the Location section. **Note: operating the unit at a lower voltage (eg: 208V) may result in reduced performance.** On first power up and when the unit is ready to begin a new cycle, the Display Panel shows “READY S.P. = XXX°C”. (SP = Set Point, XXX is the set point temperature).

**3. AIR CONNECTION**

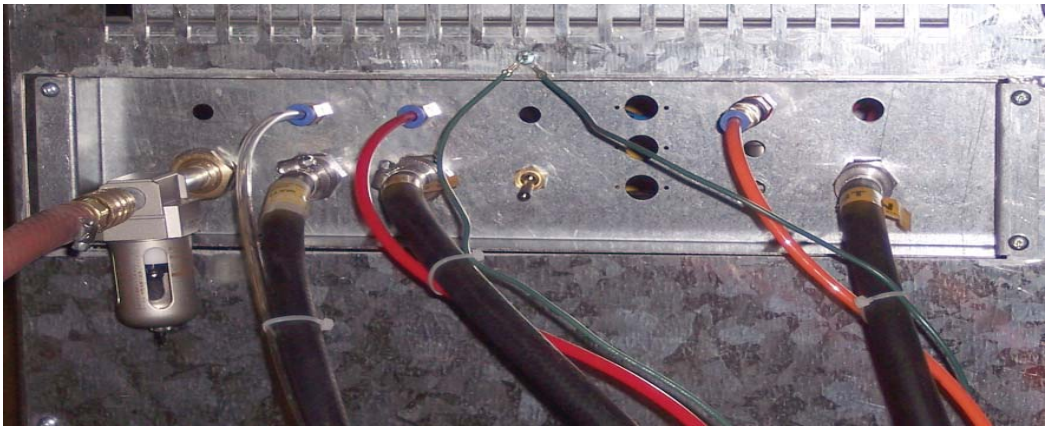
This unit is equipped with air operated Dual Diaphragm pumps and requires a supply of clean, dry air of at least 85 PSI (6 kg/cm2) and 2 CFM. **Note: If necessary , install a Moisture Filter.**

Apply teflon tape to the Air Inlet Fitting (1/4" NPT Female Threads) and connect the Moisture Filter to it, if necessary. Connect the air supply to the Filter. Connect the air supply directly if a Filter is not used. Make sure that there are no leakages at the connections. Also make sure that the air is free of dust, rust and other contaminants. Drain the Moisture Filter before each recycling.

**4. LEVEL SENSOR TUBES (ONE RED, ONE CLEAR), SOLVENT-WATER HOSES (3 BLACK), DRUM MIXER AIR LINE (ORANGE)**

Using the picture and table on the next page as a guide, connect the various tubes and hoses to the correct connectors at the back of the solvent recycler.

## CONNECTION DIAGRAM



GR

A2 L1 L2 A3 E1 A5 A7

E2 -

A1 F1 F2 A4 E3 A6 F3

CAUTION: BOTH GROUNDING WIRES (GR) MUST BE ATTACHED AS SHOWN

| | | | |
|---|---|---|---|
| A2 | Not Used | A1 | Air Supply Line with Moisture Filter (Filter is optional) |
| L1 | Clear Tube for Clean-Water Level Sensor | F1 | Clean Water **OUT to drum** |
| L2 | Red Tube for Clean-Solvent Level Sensor | F2 | Clean Solvent **OUT to drum** |
| A3 | Not Used | A4 | Drain Pressure Toggle Switch* |
| E1 | Remote Status Light (Optional) | E3 | Not Used |
| A5 | Air Line for Drum Mixer (Orange Tube) | A6 | Not Used |
| A7 | Not Used | F3 | Dirty Solvent-Water Mixture **IN** |
| E2 | Not Used | | from dirty drum |
| * Pressurizes the Distillation Tank during waste draining to improve the flow of exceptionally viscous (thick) material. The default is OFF. Turn ON only when necessary. | | | |

**5. GROUNDING WIRES**

To prevent the build up of static electricity, any container containing solvent must be grounded. The hose for the dirty solvent and the clean solvent comes with green grounding wire. Connect one end to the grounding screw on the back of the unit and the other to, either the rim of the solvent container if it is metal or to the metal pickup rod, if the container is plastic use the "alligator clamp" provided on the container end of the wire to connect to the pick up tube.

**6. CONTAINER CONNECTIONS and ADJUSTNG THE LEVEL SENSOR TUBES**

The three Connection Kits each have a long metal rod at the container end. This rod is to be placed in the appropriate drum or container so that it sits on the bottom. See the diagram, Connection Diagram.

The CLEAN-WATER and CLEAN-SOLVENT rods also have a shorter metal tube attached to the long rod. This shorter metal tube and the attached plastic tube (either red or clear) are part of the level sensing system. To work correctly and prevent overflow, the position of the shorter metal tube must be adjusted up or down (using the set screw) so that the bottom opening is about 6 inches below the top of the drum or container. This tube should not require adjustment if a standard 55 US Gal drum is used. However, if a smaller container is used, the position will have to be adjusted, as described.

7. **DRUM MIXER**

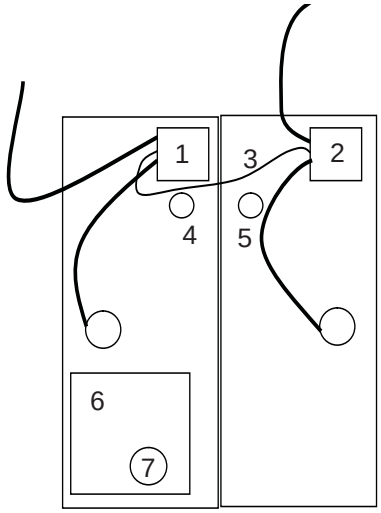
- Insert the shaft into the motor section and tighten the Allen screws well.
- Remove the "bung" from the larger opening of the Dirty Solvent Container. Insert the impellor and shaft into the drum and screw the motor into the opening making sure it is tight. **Caution: the motor must be tightly installed so that the shaft is held in a vertical postion away from the wall of the Drum.**
- Connect the Drum Mixer Air Line (orange) to the mixer. Use an air line lubricator (not supplied).
- The speed of the mixer may be adjusted by adjusting the air flow using the Ball Valve (included). The on-off and duration of mixing is controlled by the computer.

**Notes:**

1. This Drum Mixer can only be used with a standard 55 US Gal Drum.
2. To prolong the life of the mixer motor, an air line lubricator (not supplied) is recommended. It must be installed only on the Drum Mixer Air Line (orange). **To prevent serious damage to the machine, DO NOT use an air line lubricator on the main air line.**

8. **RECEIVING TANK / WATER SEPARATOR - PRIMING and CONNECTIONS**

- On initial setup, to prime the separator, add two litres of tap water through the opening in the left side of the tank (No. 2 below).
- The connections shown below are made at the factory. Use the following information if the connections are removed and need to be restored.




1 SOLVENT OUT PUMP
2 WATER OUT PUMP
3 AIR LINE (BLUE)
4 LEVEL SENSOR #1
5 LEVEL SENSOR #2
6 WATER SEPARATOR TANK
7 SOLVENT/WATER MIXTURE INLET

# OPERATING PARAMETERS

The computer is pre-set at the factory and the initial setup of the unit is usually done by a Uni-ram-certified technician. If the inititial solvent mixture is changed or the initial settings need to be fine-tuned, changes can be made by the operator in SETUP mode, described below. For advice on changing the settings, or to correct a problem during the operation of the unit, call for service (section, INTRODUCTION).

**SETUP MODE**

We recommend that only personnel with expert understanding of the unit adjust the settings. Adjust set tings only when the display reads: “READY S.P. = xxx°C”. To start SETUP, press and hold SETUP key and press START. Use + or - key to adjust setting. To move to the next parameter, press OK.

| STEP | DISPLAY | KEY TO ADJUST | KEY TO ACCEPT | DESCRIPTION |
|---|---|---|---|---|
| 1 | LOW AIR PRESSURE | NA | | Appears if Air supply is not yet connected. |
| 2 | READY S.P. = 200°C | NA | | Indicates unit is ready and set to 200°C |
| 3 | SET-UP MODE | NA | | Indicates SETUP mode is active |
| 4 | CYCLES # = 1 | + OR - | OK | Change to 2, see Example Scenario |
| 5 | SET-PT = 200°C | + OR - | OK | Depends on BP of waste mixture |
| 6 | LO TEMP PWR = 100% | + OR - | OK | Adjust together to compensate for excessively vigourous vapourization which can cause leakage at the Lid Gasket. |
| 7 | HI TEMP PWR = 80% | + OR - | OK | |
| 8 | SWITCH TEMP = 200° | + OR - | OK | |
| 9 | MIXING = 5M | + OR - | OK | The Drum Mixer mixes the waste mixture. |
| 10 | REF. TIME =1H00M | + OR - | OK | “Refill Time” = duration of Refill Cycle; Range: 1-24 hours; **best setting is max without loss of ouput** |
| 11 | POST HEAT = 0H00M | + OR - | OK | Minimize to allow more Refill Time; best setting determined by Drain Temp, the nature of the waste content and the “DOWN SLOPE” setting (set at the factoy or during initial setup). |
| 12 | DRAIN TEMP = 100°C | + OR - | OK | Increase to lower the viscosity of the waste or to allow a shorter Post Heat setting or to reduce the Cool Down time; decrease if too much odour |
| 13 | READY S.P. = 200°C | NA | | Indicates unit is ready and set to 200°C |

# OPERATION

A A typical setting is where CYCLES # = 2 cycles, each cycle is 12-15 hours each.) The operation consists of the following:

1. **Press START**
   The unit will operate continuously for 24 -30 hours and drain the drum of dirty solvent producing clean solvent and distilled water.
2. **CHECK CONTAINERS HOLDING DIRTY SOLVENT, CLEAN SOLVENT AND CLEAN WATER**
   At the end of the batch remove the dirty drunm, clean solvent drum and clean water drum as necessary. Prepare drums for the next batch.
3. **DISPOSE of WASTE INK**
   Clean the tank, lid and float and dispose of the waste ink residue in the regular waste ink drum.
4. **CLEANING AND CHECKING THE DISTILLATION TANK, LID AND FLOAT AFTER EACH "BATCH"**
   To ensure maximum performance, it is extremely important to clean and maintain the Distillation Tank, Lid and Float system as follows:

- Wear protective clothing according to local regulations. A minimum of solvent resistant gloves, googles and mask are recommended.
- Make sure the unit is in "READY" mode.
- Open Safety Cover fully.
- Unlatch and open the Tank Lid. Use **EXTREME CAUTION** to avoid damage to the Float System, • Using a cloth soaked in clean solvent, wipe the Tank Lid interior and the exposed part of the Lid Gasket.
- While supporting the Float System firmly with one hand, clean the float ball and stem with the other.
- When finished, check that the float moves freely and that all hardware is tight. If neccesary, re-tighten any loose hardware.
- To help in the cleaning of the Tank interior, add solvent to the Tank automatically by activating the CLEANING MODE cycle: push and hold O.K. button then press STOP. The DISPLAY will read "CLEANING MODE ?".
- Press START to continue or STOP to cancel. If you continue, the drain is closed and the filling pump runs for about 10 seconds to add some solvent to the tank. This is followed by heating, if necessary.
- The DISPLAY will then read "READY TO CLEAN" for 5 seconds followed by "PUSH O.K. TO DRAIN". **Do not press O.K. yet**. Proceed with the cleaning.
- Using a cloth soaked in clean solvent, wipe the Tank walls and bottom. If the residue is baked on, scrape it off carefully so as to avoid damaging the Tank. **When finished, press the O.K. button** to drain the tank.
- When the Tank is fully drained, wipe the walls clean with a clean cloth.
- **IMPORTANT: Proper sealing of the Tank Lid is essential for both efficiency and safety. Check that the Lid Gasket is properly seated in the groove and that it is clean. Replace if damaged or worn (see Maintenance section). Also make sure that the Tank sealing surface is clean and free of debris.**
- Close the Tank Lid, latch it and lock it down.
- Check the **Lid Tension** (sealing tightness). If the Lid appears to be loose in any way or leaking solvent, read and follow the instructions given in the Maintenance Section of this Manual.
- Close the Safety Cover and check that the Locking Mechanism is working properly.

**Notes:** During the first cycle, check all connections for leaks and watch for any Error Messages. See the section Error Messages and Troubleshooting for more information on each Error Message.

# OPERATIONAL STATUS MESSAGES

The following messages are displayed during normal operation.

| DISPLAY | DESCRIPTION |
|---|---|
| READY S.P. = 200°C | Indicates unit is ready and set to 200°C |
| DRAIN VALVE CLOSED | Displays for about 5 sec. |
| AGITATE LEFT = xM | Counts down in minutes. |
| FILLING | Displays during filling. |
| HEAT ON | Displays for about 5 sec. |
| SET-PT = 200°C | Alternates with TANK = xxx°C and VAP EX. = xxx°C |
| *REFILL = xHxM | Displays during REFILL, counts down in hours and minutes. |
| *POST HEAT = xHxM | Displays during POST HEAT, counts down in hours and minutes. |
| TANK = xxx°C | Alternates with SET-PT = 200°C and VAP EX. = xxx°C |
| VAP EX. = xxx°C | Alternates with SET-PT = 200°C and TANK = xxx°C |
| COOLING | Alternate during COOLING. |
| T1 = xxx°C | |
| DRAIN VALVE OPEN | Displays for about 5 sec. |
| FINAL TRANSFER | Displays during TRANSFER. |
| READY S.P. = 200°C | Indicates unit is ready and set to 200°C |
| *REFILL occurs first followed by POST HEAT.<br>Note: the POST HEAT phase may continue for a while without displaying if the distillation process has been manually set to a longer time. COOLING will begin when POST HEAT is finished. | |

## ERROR MESSAGES AND TROUBLE SHOOTING

If an abnormal condition is detected by the unit's Self-diagnostic System, the Display Panel shows one of the following error messages. To get help in correcting the problem note the massage and call for service.

| MESSAGE | DESCRIPTION | REMARKS | LIGHTS & BUZZER |
|---|---|---|---|
| DISCONNECT POWER | Temperature at TC#1 continues to rise by more than 30˚C within 10 minutes after Heater is turned off. | Defective Heater TRIAC is the most likely cause. Power supply must be disconnected as soon as possible. | RED FLASH & BUZZER |
| COND THERMOSTAT | Condenser Thermostat is open during initial fault monitoring cycle | Unit will not start when START button is pressed until the condenser cools down. | YELLOW STEADY |
| CONDSR OVER-HEAT | Condenser Thermostat is open up to 10 min. | Automatically stop heater. | RED STEADY |
| CHECK FAN | After 10 min. | Automatically stop process except Fan. | RED STEADY |
| CHK TANK SENSOR | TC#1 has broken connection | Automatically stop process | RED STEADY |
| CHK COND. SENSOR | TC#2 has broken connection | Automatically stop process | RED STEADY |
| CHK BOILER FLOAT | If Float shows FULL, after draining Debris, | Automatically stop process | YELLOW FLASHING |
| SEPARATOR FLOAT | One of Level Sensor Floats of Water Separator is stuck at full position. (Not closed in 90 seconds) | Automatically stop process. Check Level sensors and transfer pumps for defect. Press START to resume process from where stopped. | YELLOW FLASHING |
| CHK HEAT CIRCUIT | Operation and Self-test message. There is opening in Heater circuit | | YELLOW STEADY |
| LOW AIR PRESSURE | Before and during air solenoid operation. | Automatically stop process. Pressure recovery will re-start from where it stopped. | YELLOW FLASHING |
| LOW WASTE LEVEL | Filling time-out in Initial Filling. (Both Boiler Level Sensor #1 and #2 did not open.) | Process is terminated. Replenish waste source and press START button, operation will resume from where it stopped. | YELLOW STEADY |
| REFILL TIME-OUT | Float Switch did not open within pre-set refilling time. | The process will be competed and this display will show at the end. Pressing STOP button will return to READY mode. | YELLOW STEADY |

## ERROR MESSAGES AND TROUBLE SHOOTING - continued

| MESSAGE | DESCRIPTION | REMARKS | LIGHTS & BUZZER |
|---|---|---|---|
| BOILING TIME-OUT | No vapor within factory pre-set time. | Automatically stop process | YELLOW STEADY |
| LO VOLTAGE RESET | Low Voltage power supply happened during process. | Automatically stop process. Press “START” and it will resume from where it stopped. | YELLOW STEADY |
| RESET OCCURRED | Power supply irregularity happened during process. | The process was automatically stopped. Press “START” and it will resume from where it was stopped. | YELLOW STEADY |
| WAIT FOR READY | This message is displayed for 5 seconds when START button is pressed before READY mode. | After 5 seconds, display will return to COOLING T=XXXC. | N/A |
| OUTPUT DRUM FULL | Water Drum or Solvent Drum Level Sensor (NC Micro Switch) detects FULL level.. | Automatically stop process. Replace the clean pail and press “START”. It will resume from where it stopped. | YELLOW FLASHING |
| DEBRIS PAIL FULL | Debris weight sensor (NC Micro Switch) detects FULL weight.. | Automatically stop process. Empty the debris pail and press “START”. It will resume from where it stopped. | YELLOW FLASHING |
| WATCH DOG RESET | Software integrity has been temporarily halted. | Automatically stop process. Press “START”. It will resume from where it stopped. | YELLOW FLASHING |
| ILLEGAL OPCODE | Software malfunction happened and has been temporarily halted. | Automatically stop process. Press “START”. It will resume from where it stopped. | YELLOW FLASHING |
| ILLEGAL ADDRESS | Software malfunction happened and has been temporarily halted. | Automatically stop process. Press “START”. It will resume from where it stopped. | YELLOW FLASHING |

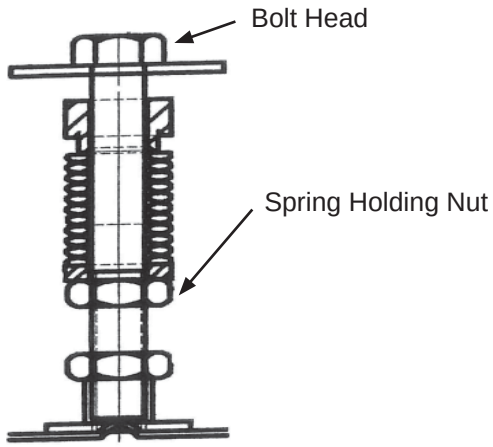
# MAINTENANCE

**CAUTION: Wear protective clothing according to local regulations. A minimum of solvent resistant gloves, googles and mask are recommended.**

## CHECKING AND INCREASING LID TENSION (BY ADJUSTING THE SPRING BOLT)

**Some decrease in tension or lid tightness is normal with average use. This procedurre should only be done if the Lid is leaking solvent or there is excessive looseness.**

Before following this procedure, check for a worn Lid Gasket or loose Hinge Bolts. Replace the Lid Gasket or tighten the Hinge Bolts as needed. If the Lid appears to be sealing tightly but is leaking solvent, the poblem may be a blockage in the solvent flow path or a set point that is too high for the solvent being recycled. Call for service. If the Lid is not leaking solvent but still appears to be too loose, follow this procedure to increase the Lid tension.



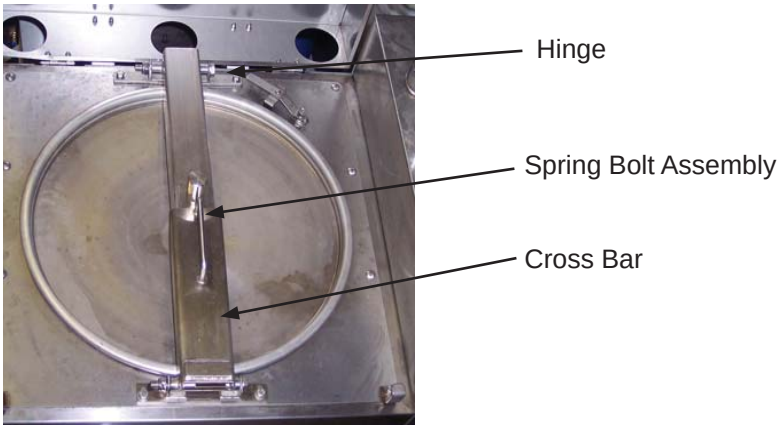

Spring Bolt Assembly

This procedure tightens the Lid by increasing the tension on the spring attached to the Lid Bar Spring Bolt Assembly. The Lid and Bolt Assembly is carefully designed as a Safety Pressure Relief system to prevent a dangerous build up of pressure inside the closed tank. **Do not adjust the Spring Holding Nut by more than 2 full turns maximum.** If 2 full turns do not solve the problem, call for service.

- While holding the Bolt Head with a wrench, turn the Spring Holding Nut no more than a 1/2 turn at a time. Turn in a counter- clockwise direction (as you look down on it).
- After each 1/2 turn, operate the unit normally and check for leaks.

## REPOSITIONING LID and TIGHTENING HINGE BOLTS

The Hinge bolts can loosen over time, causing the lid to shift off center. This can lead to an inadequate seal and leaking around the Gasket. Loosen the bolts, reposition the lid and re-tighten the bolts.



# MAINTENANCE

## REPLACING LID GASKET

Remove the old gasket by prying it out gently with a screw driver. Place the new gasket in the groove and press in firmly all around.

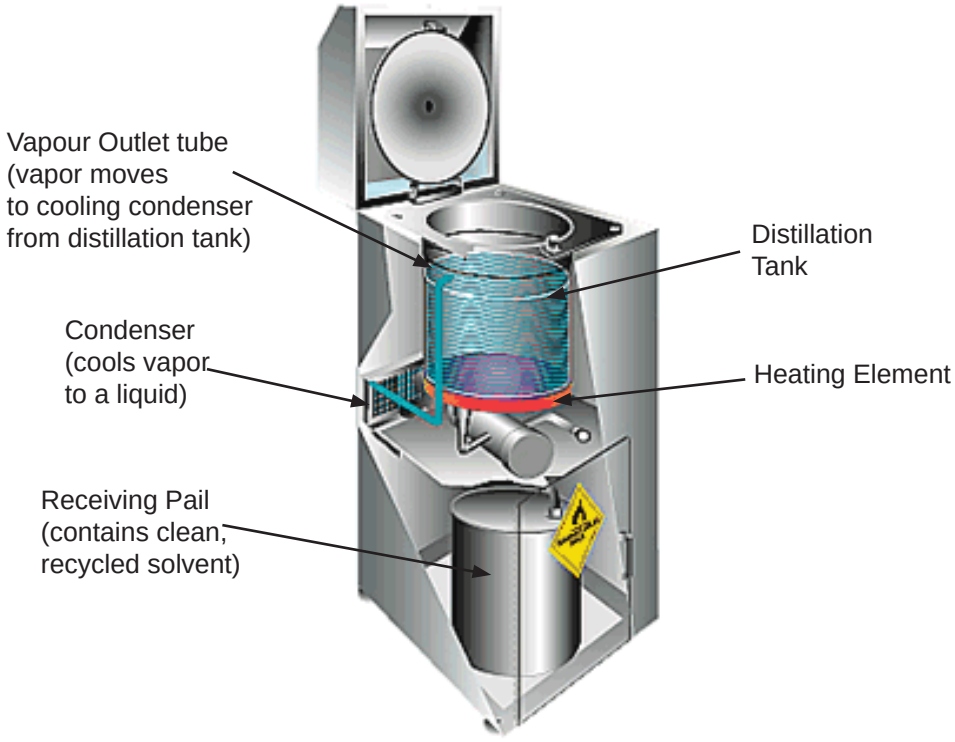
## REPLACEMENT PARTS

| DESCRIPTION | PART NO. |
|---|---|
| SAFETY COVER | 960-3310 |
| KEYPAD | 900-3461 |
| DIAPHRAGM PUMP, 2” | UDP2TS |
| DIAPHRAGM PUMP, 4” | UDP4TASS |
| DRUM MIXER | 960-9040 |
| LID GASKET, VITON | 965-2150V |
| DOOR HANDLE & 2 SCREWS | 120-318S & 99-404S |
| CONNECTION KIT, SOLVENT IN | 965-4910 |
| CONNECTION KIT, SOLVENT OUT | 965-4920 |
| CONNECTION KIT, WATER OUT | 965-4930 |

## THEORY OF OPERATION - DISTILLATION PROCESS

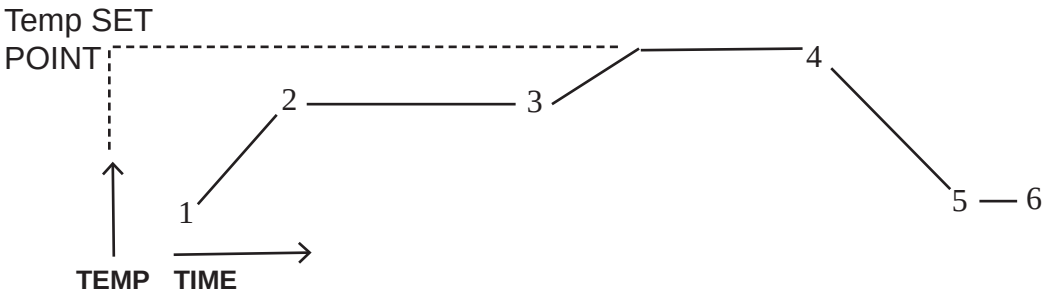
Waste solvent consists of the original solvent plus liquid and solid materials picked up during use of the solvent. Recycling separates the original solvent from the waste materials. During the recycling process, the distillation tank fills with dirty solvent and the heating element heats the mixture. The solvent mixture boils and the vapour passes through a cooling condenser where purified, clean solvent, ready for use condenses out. Waste materials in the dirty solvent boil at a temperature substantially above the Temperature Set Point so they remain in the distillation tank for disposal.

Solvent Recycling




### Distillation Cycle

1. Heating starts, temperatue rises
2. Vapourization starts
3. Vapourization ends, AUTO SHUT-OFF / BAKE TIME starts (see SETUP)
4. Baking finishes, cooling begins
5. Cooling is complete
6. Separation occurs



## Full Product Warranty

These Uni-ram products have been engineered and manufactured to high performance standards. Each unit has been subjected to detailed factory testing before shipment.

This product comes with a one-year full warranty from the date of purchase. Uni-ram Corporation reserves the right to repair or replace the unit, free of charge, to the original purchaser if a part is found to be defective in material or workmanship as determined by factory service personnel. The items listed below under “Conditions of Warranty” as consumables are not covered.

Uni-ram reserves the right to direct the customer to ship the unit collect to the Uni-ram factory or to an approved Service Center for repair using the Uni-ram Return Goods Procedure or to repair the unit on-site. To prevent damage in transport, the purchaser must ship the unit in the original packaging or use alternate adequate packaging. All units must be shipped clean and free of solvent.

Conditions of Warranty:
As Uni-ram Corporation has no control over the working conditions or circumstances under which the purchaser stores, handles or uses the product, Uni-ram makes no warranty or claim, either expressed or implied with respect to this product’s fitness for any purpose or the result to be obtained from its use. This condition applies to the sale of all products and no representative or distributor of Uni-ram Corporation has the authority to waive or change these conditions.

This warranty applies only to the original purchaser and does not apply if the unit has been misused, overloaded, neglected, altered or used for any purpose other than those specified in the operating and installation instructions. Deterioration due to normal wear is not covered by this warranty. Damage due to accident, transportation, fire, floods or acts of God is also not covered. Units whose serial numbers have been altered or removed are not covered. The warranty is invalid if unauthorized abrasives are used in this unit. Unauthorized attempts at self-repair or alterations by the owner also invalidate this warranty. Interior or exterior finishes are not covered by this warranty.

Consumable Items are not covered by this warranty.

This warranty replaces all other warranties expressed or implied by statute or otherwise.

To make a claim, call Uni-ram Service at 1-800-417-9133 and quote the serial number of the unit.

**SERIAL NUMBER:** _____

**PURCHASE DATE:** _____

**PURCHASED FROM:** _____